Michigan's Freight Needs
Citizens Advisory Committee Report

Prepared for the Transportation Funding Task Force

Submitted by the Citizens Advisory Committee
Intermodal Freight Subcommittee

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Table of Contents

Executive Summary

To position itself for economic growth, Michigan will need to meet the needs of all its freight modes and develop opportunities for increased freight efficiencies, such as intermodal services. Intermodal services use multiple freight modes for the most effective means of transport. Commodities are exchanged between modes at either intermodal terminals or transloading facilities. It is a fast growing freight sector, becoming the number one source of freight-railroad revenue in 2003.

The reliable, safe and efficient movement of goods is essential to Michigan's economic future. Investing in Michigan's transportation system can more effectively increase productivity and promote economic growth if freight needs are integrated into the plan.

The safe and efficient movement of goods via truck, rail, water and air is essential to Michigan's economy. Conveyance of raw materials,

Summary of Freight Intermodal Activities in Michigan

In 2003, Michigan's transportation network moved 670 million tons of freight valued at $1 trillion. Among the modes:

Truck	69 percent of the tonnage (84 percent by value)
Railroad	18 percent of the tonnage (14 percent by value)
Marine Vessel	12 percent of the tonnage (about 1 percent by value)
Air Cargo	1 percent of the tonnage (about 1 percent by value)

What's at Stake for Freight with Deteriorating Roads in MI?

- A region's ability to minimize traffic congestion and provide reliable freight movement significantly impact whether or not jobs are created in that region. (Transportation Research Board, 2002)

- Nearly every product consumed is moved by truck at one point - in most cases, an average of seven times before reaching the ultimate consumer.

- Freight volumes will almost double by 2035. The percentage of truck shipments will increase while the percentage of air shipments are expected to remain the same and rail and marine shipments are predicted to decrease. (USDOT Freight Analysis Framework)

- Without growth in freight-rail system (privately funded), 900 million tons of freight could shift to highways by 2020, costing shippers $326 billion and highway users $492 billion in travel time, operating and accident costs and necessitating $21 billion in highway improvements nationally. (USDOT Freight Analysis Framework)

- A region's ability to minimize traffic congestion and provide reliable freight movement significantly impact whether or not jobs are created in that region. (Transportation Research Board, 2002)

- Michigan will lose out to other regions that invest in logistics-friendly transportation networks (Chicago, Kansas City, Dallas, Louisville)

- Michigan's roads 48th in the nation in a 2007 national survey of truck drivers. (Overdrive Magazine)

- Congestion consistently ranks in the "top 10" critical issues in the trucking industry (ATRI, 2007)

- Congestion causes costly delays ($60/person hour), compounding hours of service issues and truck driver shortages.

- The Texas Transportation Institute reports that over the decade between 1993 and 2003, the cost of highway congestion in the nation's urban areas increased from $39.4 billion to $63.1 billion, an increase of 60.2 percent.

- Productivity losses, costs associated with cargo delays, and other economic impacts to freight carriers and businesses are at stake if Michigan doesn't address its transportation needs.

- In Michigan, trucking accounted for nearly 670 million tons of Michigan commodity movements in 2003 valued at nearly $1 trillion. The trucking industry in Michigan employs about nine percent of the State's residents.

What Does Trucking Need?

Current Roads System ("Do Nothing")

- Escalating cost of delivery, operation & equipment maintenance
- Growing "stranded costs" of delay
- Reduced competitiveness for employers, manufacturers & consumers
- Increased costs of goods throughout the economy
- Marginalize Michigan's current competitive advantage of truck size & weight to reduce congestion and enhance cost savings to shippers

Good: Enhancing Trucking Productivity

- Dedicate transportation funds to roads & highways - minimize non-road diversions. (Example: allocate 6 percent sales tax on motor fuels toward transportation rather than general fund.)
- Ensure *efficient* revenue collection and administration of transportation funds. (Trucking supports building on the advantages of fuel tax system and is concerned about tolling & public private partnerships for existing and proposed transportation facilities because of duplicative administrative costs and "paying twice.")
- Adopt policies that improve trucking productivity and release existing captive capacity
- Focus transportation investments on congestion mitigation on commercial trade routes and non- infrastructure means that will have the most impact on systemic chokepoints (Examples: Pre-clearance procedures at international borders; expand Customs facilities at locations where MDOT has responsibilities; ITS at weigh stations; etc.)

Better: Priority Funding for Freight Movement

The items below represent infrastructure investments and priorities that would be of the greatest benefit for trucking and Intermodal freight:

- Congestion mitigation on freight routes to improve mobility performance (20 percent of state roadways are congested; 31 percent of trucking miles are on state trunklines.)
- Trade corridors (I-94, I-75) should be priorities; border trade with Canada should expand Customs Pre-Clearance participation (FAST, NEXUS) and maximize inspection facilities where MDOT has responsibilities
- All season roadways - Upgrade remaining 4 percent of state highways and sections of county road to Class A in industry corridors.
- Increase funding for forest roads - $5 million Transportation Economic Development Funds distributed to counties has remained at 1987 levels.

What Does Rail Need?

Railroads invest private funds to maintain and expand network of tracks and facilities. Road resources are needed when roads and railroad tracks intersect. MDOT administers various rail programs that enhance rail safety and are currently underfunded.

- 20 percent of Michigan's crossings 4,800 rail crossings are in need of repair or replacement. (MI Railroad Association)

- No current funding available for crossing surfaces on local roads (typically 10-20 surfaces are repaired annually: 3 are planned for FY 2009)

- Active rail crossing warning devices reduce motorists risks 89 percent (eliminating crossings removes risk)

- Rail safety (i.e., grade crossings) and short-line improvements are the two system-wide needs. (AASHTO, Freight Bottom Line Report)

- An efficient freight network can relieve congestion on the state's highways and reduce funds needed for new lane miles.

- Intermodal (containerized) freight is the fastest growing rail segment, but without upgrades in Intermodal facilities in Michigan, cost effective freight movement is curtailed.

Current Grade Crossing Expenditures ("Do Nothing"): $9.3 million annually

- Improving 50-70 crossings annually in MI is ideal, or about 5 percent of the system (Currently only 40-50 warning devices are installed due to funding shortfall)
- Only, 35 to 40 will be addressed in FY2009 and less in the future without additional resources

Grade Crossing Expenditures: $12.6 million annually

- Funds 5-10 additional crossing safety projects on local and state trunkline
- Allows target 5 percent of all crossings to be improved annually

Better Crossing Expenditures: $25.8 million annually

- $1.3 million would address 5 per4cent of crossings warranting safety improvements.
- $6 million would improve trunkline crossing surfaces on trunkline crossings to meet MDOT good condition pavement rating goal of 90 percent
- $2 million additional modernizes existing warning devices on trunkline crossings at 10 to 20 locations annually
- $7.2 million would upgrade most critical surfaces on 5 percent of local roads, matching private rail investment

Current ("Do Nothing") System Preservation and Expansion: $4.3 million

- Only $4.3 million for Funds State Comprehensive Transportation Fund supports MDOT's Freight economic Development Program (FEDP), Michigan Rail Loan Assistance Program (MiRLAP) and the Capital Development Program.
- Result is $15.2 million in delayed maintenance and upgrades on state-owned rail lines
- MiRLAP is $2.7 million short of $15 million required by statute to assist short lines in track rehabilitation.

Good System Preservation and Expansion: $6 million

- $500,000 additional annually could cover increasing property management and emergency repairs on state owned rail.
- Eliminate deferred track maintenance with additional funds.
- $2.7 for MiRLAP would allow loans for three additional projects/year

Better System Preservation and Expansion: $15 million

- $500,000 additional annually could cover increasing property management and emergency repairs on state owned rail.
- $5 million for CAP track rehabilitation projects on 15 to 20 miles of system each year.
- $2 million for FED would promote economic development activity from rail lines
- $12.7 million additional for MiRLAP would promote short line modernization to allow higher capacity (286,000 pound railcars) and meet increased demand for rail service.

To position itself for economic growth, Michigan will need to meet the needs of all its freight modes and develop opportunities for increased freight efficiencies, such as intermodal services.

Overview - Intermodal Freight Activities in Michigan

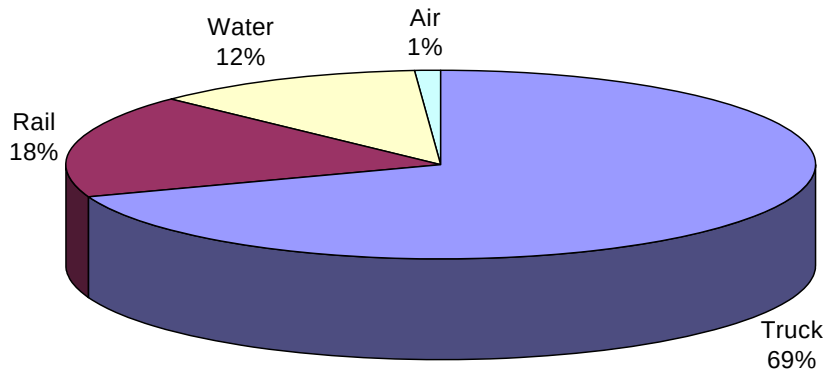
Michigan's economy depends on an efficient transportation infrastructure. The safe and efficient movement of goods via truck, rail, water and air is essential to a strong economy. Despite the competitive nature of the freight transportation industries, supporting Michigan's current businesses and positioning the state for economic growth is a shared interest for all the freight modes. Even with the competitive rivalries among modes, the Citizens Advisory Committee, Intermodal Freight Subcommittee found common cause. Due to the importance of freight transportation to Michigan's economy, the Subcommittee is providing the following report to document the role of freight transportation. The Subcommittee has also worked to determine needs of the three largest freight transportation modes in Michigan- trucking, rail and marine. Although the Subcommittee recognizes the importance of air freight; it decided those needs would be better addressed through the Citizens Action Committee, Aviation Subcommittee.

The infrastructure needs identified by the Citizens Advisory Committee's Highway, Road and Bridge and Aviation Subcommittees are critical for trucking and air freight transportation. The Citizens Advisory Committee, Intermodal Freight Subcommittee has worked to recognize the role of all modes of freight transportation in Michigan's economy and identify additional trucking, rail and marine freight transportation needs that will help ensure a strong economic future for Michigan without duplicating efforts.

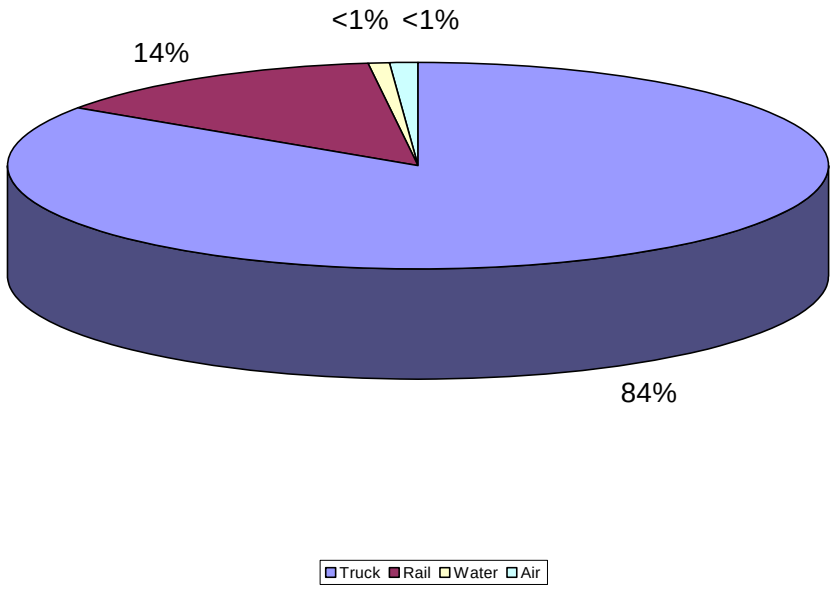
The most recent multi-modal freight data shows that in 2003, Michigan's transportation infrastructure moved 670 million tons of freight, valued at over $1 trillion. Trucking accounted for nearly 70 percent of the tonnage moved, followed by rail at 18 percent, water at 12 percent, and air at less than 1 percent.[1]

[1] Michigan Department of Transportation. State Long-Range Transportation Plan, 2005-2030. Freight Profile Technical Report.

Michigan's 2003 Freight Movements (in tons)



Michigan's 2003 Freight Movements (by value)



Source: MDOT State Long-Range Transportation Plan, 2005-2030, Freight Profile Technical Report

As the cost of highway congestion has increased, public policy-makers at all levels of government have started looking to the railroads to carry more freight and relieve truck and highway congestion, and to help conserve energy, reduce engine emissions and improve safety. On average railroads move one ton of freight 423

miles using one gallon of diesel fuel. However, the growing demand for freight transportation is also pressing the capacity of the nation's freight railroad system.

Productivity losses, costs associated with cargo delays, and other economic impacts to freight carriers and businesses are at stake if Michigan doesn't address its transportation needs. The Texas Transportation Institute reports that over the decade between 1993 and 2003, the cost of highway congestion in the nation's urban areas increased from $39.4 billion to $63.1 billion, an increase of 60.2 percent.

Specializing in the movement of bulk commodities, rail and marine freight serves the needs of several industries and relieves part of the demand on the highway system. Measured as one ton of freight moving one mile these freight movements have doubled since 1980 and the density of traffic (ton miles per mile of track) has tripled However, current conditions, including escalating oil prices and emission concerns resulting from a global market place, have brought intermodal to the forefront, requiring increased cooperation between rail and truck operations. The world is indeed "flat" and changes are taking place at a record- breaking pace. Intermodal essentially addresses world wide freight that moves from barges, to trains and trucks at intermodal terminals as addressed in the recent AASHTO report.

The National Rail Freight Infrastructure Capacity and Investment study estimates that meeting the U.S. Department of Transportation's projected 88 percent increase in demand for rail freight transportation in 2035 will require an investment in infrastructure of $148 billion (in 2007 dollars) over the next 28 years. The Michigan Department of Transportation (MDOT) administers rail programs to support grade crossing safety and the state's rail system. The intent of these programs is to improve grade crossing safety, facilitate economic development, preserve infrastructure and provide rail access to affected businesses throughout the state. Car/train collisions are thirty times more likely to result in a fatality than car collisions with another car, bus or truck so part of MDOT's approach is to add active-warning devices at rail crossings to reduce motorist risk by up to 89% and to eliminate crossings to eliminate risk. MDOT's rail programs are currently funded with $13.6 million federal and state transportation dollars. MDOT has identified at least $5 million in additional grade-crossing-safety and rail-system basic needs. Car/train collisions are thirty times more likely to result in a fatality than car collisions with another car, bus or truck. To continue add active-warning devices at rail crossings to reduce motorist risk by up to 89 percent. Raising the investment by $27 million would adequately fund its efforts, increasing economic development activities and expanding grade-crossing safety to address the 20 percent of the crossing surfaces in the state that are in need of repair or replacement.

Issues important to marine shipments include funding for dredging and disposal location; addressing federal regulations to encourage short sea shipping; intermodal connections; and constructing a new lock at Sault Ste. Marie to increase the system's efficiency and reliability.

Industries Served by Freight Modes

All industries, from manufacturing to the service industry to agriculture, depend on the movement of goods to support Michigan's economy. Manufacturers look at the transportation network and the costs associated with obtaining materials and delivering finished products to customers

Transportation is often a fundamental consideration in locating a business. Roadway user demand and constrained capacity produces congestion and can affect freight transportation prices and reliability, which can add up to a higher cost of doing business and ultimately a less productive and competitive economy. Therefore, the keys to Michigan's economic strength and quality of life include the efficient, reliable and safe movement of goods.

Agriculture is Michigan's second leading economic sector contributing over $63.7 billion per year and growing.[2] **Michigan produces over 200 commodities on a commercial basis, making the state second only to California in agricultural diversity**. Michigan exports about one-third of its agricultural commodities each year, generating more than $1 billion and supporting nearly 13,000 jobs. Michigan ranks 5th and 8th nationally in exports of fruits and vegetables, respectively. Michigan has about 10.1 million acres of farmland and is home to 53,200 farms averaging 190 acres each.[3]

Future decisions for transportation needs must take into account the changing dynamics of the industries that rely on them. The current shift in usage of agricultural commodities, particularly corn, for energy production is changing trends of export transportation needs and increasing pressures on domestic transportation needs. Our agriculture industry is and will continue to be dependent on a sound transportation system to move materials and products to and from farm and market.

[2] Interim Update on the Economic Impact of Michigan's Agri-Food and Agri-Energy System; H. Christopher Peterson, Director; William Knudson, Product Market Economist; MSU Product Center for Agriculture and Natural Resources January, 2008

[3] MDA Facts; Michigan Department of Agriculture

Trucking

Nearly every product consumed is moved by truck at one point, and in most cases, manufactured goods are transported by trucks an average of seven times before reaching the ultimate consumer. In Michigan, trucking accounted for nearly 670 million tons of Michigan commodity movements in 2003 valued at nearly $1 trillion. The trucking industry in Michigan employs about nine percent of the State's residents.[4]

Trucking continue to increase its market share of the nation's freight pool because of the flexibility and on-time delivery associated with trucking. **Trucks haul 70 percent of freight by volume and 86 percent by commodity value compared to other modes.** While the trend toward intermodal freight movements (containerized cargo that is lifted between trucks, rail and water vessels) continues to increase, motor carriers provide the final delivery from intermodal facilities.

Top Commodities moved by trucks in Michigan

Commodities	*Tons*	*Commodities*	*Value*
Nonmetallic ores and minerals	111.4	Secondary traffic	$344.5B
Secondary traffic	62	Transportation equipment	$159.3B
Clay, cement, glass, stone	49.9	Machinery	$100.3B
Food products	32.7	Fabricated metal products	$62.2B
Farm products	31.6	Electrical equipment	$57.9

Source: MDOT State Long-Range Transportation Plan, 2005-2030, Freight Profile Technical Report

Trucks accounted for eight percent of all vehicle miles traveled on Michigan roads in 2004 according to the USDOT Office of Highway Policy Information. Since motor carriers utilize the highways, roads and bridges it is logical that the condition of Michigan's roads impact the vitality of the trucking industry. Trucking companies contribute significantly toward road funding. In addition to state and federal fuel taxes and vehicle registration fees, truckers are charged 12 percent federal excise tax, tire tax, heavy vehicle use tax. **In 2005, the federal government collected $16.546 billion from commercial carriers or about 53.1% of the $31.179 billion from all motor vehicles.**[5].

The motor fuel tax has proven an equitable and efficient method for truckers to pay their fair share. The fuel taxes are collected per gallon at the time of purchase and reconciled based with the states, apportioned based on miles driven in the various jurisdictions. **The trucking industry views with great disdain the concept of tolling and "public/private partnerships"** as a source new for highway funding for existing

[4] Michigan Department of Transportation. State Long-Range Transportation Plan, 2005-2030. Freight Profile Technical Report.

[5] American Trucking Associations, 2007-2008 American Trucking Trends; based on FHWA's Highway Statistics 2005.

and proposed transportation infrastructure and would prefer enhanced fuel taxes to fund needed improvements. Such alternative funding mechanisms often divert 20-35 percent transportation revenues to administration (compared to less than one percent with the current fuel tax system.) [6]

The trucking industry has every incentive to maximize productivity and utilize excess capacity. Congestion and resulting delays increase the cost of doing business in a highly competitive industry. Increased maintenance and reduced equipment life cycle are impacts of a less than adequate road system. **A recent survey among truck drivers ranked Michigan's roads 48th in the nation.**[7]

At the same time, the trucking industry is challenged by rising fuel costs, driver shortages, and hours of service constraints – all of which affect the costs of doing business. Policies that foster greater productivity within the trucking industry would benefit the state's economy in conjunction with better infrastructure. For instance, Michigan manufacturers, the agricultural sector, construction industry and the auto companies have benefited from Michigan's weight limits on trucks. Michigan allows truck weights based on truck axels of up to 160,000 pounds, compared to the federal limits of 80,000 pounds[8]). Further enhancements that allow fewer trucks to carry more product (either by weight or vehicle configuration) increase the utilization of infrastructure investments and reduce the number of trucks on the road.

Commerce and trade are not bound by a state's borders, and the trucking industry is a perfect example. The condition of Michigan's roads is directly related to the transportation cost for motor carrier service. A competitive, efficient trucking industry relies on quality roads and contributes to a vibrant business climate.

Rail

In 2003, Michigan's railroads carried 120 million tons of freight, approximately 18 percent of the total commodity movements. Rail is especially a cost-effective alternative for heavy and bulky commodities, and is commonly a preferred transport method for hazardous materials.[9] In addition, 70 percent of finished automobiles move by rail. Intermodal, however, is the fastest growing segment in the industry, requiring rail and truck movements to final destination.

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[6] American Transportation Research Institute, *Critical Issues in the Trucking Industry-2007*, p. 7.
[7] *Highway Report Card Survey* 2007 of truckers nationally by *Overdrive Magazine*.
[8] Michigan's truck weights are actually less per axle than the federal limits: 13,000 pounds per axles versus 17,000 pounds. It should be noted that less than 5% of trucks in Michigan exceed the 80,000 pounds on 5 axels national standard, with trucks paying significant premium for overweight permits. Steel, agricultural and construction product users are the greatest beneficiaries. See MDOT Bureau of Transportation Planning Intermodal Policy Division white paper, "Michigan's Truck Weight Law."
[9] American Association of State Highway and Transportation Officials. Freight-Rail Bottom Line Report.

Top Commodities moved by rail in Michigan

Commodities	*Tons*	*Commodities*	*Value*
Coal	19.41	Transportation equipment	$80.52B
Chemical products	14.49	Miscellaneous or mixed shipments	$22.99B
Transportation equipment	13.54	Primary metal products	$20.43B
Paper and pulp products	7.93	Chemical products	$13.45B
Primary metal products	7.81	Paper and pulp products	$7.45B

Source: MDOT State Long-Range Transportation Plan, 2005-2030, Freight Profile Technical Report

Whereas highways, roads and bridges are paid for from public funds (derived from primarily fuel taxes and motor vehicle registration fees), the railroad industry owns and maintains its network of rail lines. Michigan has approximately 3600 miles of rail lines, operated by approximately 26 companies.

Consistent with a national trend, Michigan's rail infrastructure is increasingly owned and operated by short-line railroads. Short-line systems have lower labor costs and profitability targets that allow them to operate in conditions where the larger, Class I railroads no longer can profitably operate. With Michigan's peninsular geography and dependence on agriculture and mining operations, short-line operations play a significant role in the economy. Currently, approximately 22 short-line railroads operate in Michigan.

Whereas roads and bridges are paid for with public funds, the freight railroad industry is almost exclusively privately owned and financed, with railroad companies owning and maintaining the track infrastructure. Railroad companies annually invest over $100 million[10] in Michigan's rail infrastructure, analogous to highway investments, including such items as rails, ballast and ties. There are limited exceptions throughout the country, including Michigan, where government-owned rail lines are operated under contract by private entities. In Michigan, MDOT is managing 530 miles of rail lines that provide the only access to shippers in some rural parts of the state, until the lines are commercially viable enough to be divested to the private sector.

The state's rail infrastructure supplements the highway system, serving shippers throughout the state-- sometimes as the only logical transport option-- and relieving a portion of the burden carried by the highways. The industry specializes in cost effective shipping heavy products, such as coal, steel, fertilizer, lumber, ores, grain and chemicals, long distances.[11] It is estimated that these operations save the state

[10] Maintenance-of-way expenditures reported for 2006 totals $149,805,315. Michigan Department of Treasury, Bureau of Local Governments, Assessment and Certification Division.

[11] In 2007, railroads reported moving a ton of freight 436 miles per gallon. Association of American Railroads. Freight Railroads & Greenhouse Gas Emissions. June 2008.

$266 million of annual investment in the public highway system and enhance the mobility on the system.[12]

Maximizing resources, states, including Michigan, are starting to take an integrated approach to transportation. Looking to expand the overall transportation system capacity, there has been an increasing push for states to invest in the rail system.[13]

Marine

Marine transportation is an essential component of Michigan's freight transportation system. The Great Lakes and St. Lawrence River form a maritime transportation system extending 2,300 miles from the Gulf of St. Lawrence on the Atlantic Ocean to the western end of Lake Superior. Michigan's 3,200 miles of shoreline along four of the five Great Lakes contain nearly 40 commercial ports and 140 marine terminals that ship or receive cargo. This maritime system is a partnership between the public and private sectors. The federal government generally provides the infrastructure consisting of Congressionally-authorized navigation channels, aids-to-navigation, and other marine services. The private sector generally provides the marine terminals, cargo vessels, and necessary access channels to reach the public channels. Local port authorities are present in three of Michigan's ports and own limited terminal facilities.

Air

Although it makes up a relatively small percentage of the state's freight transportation, air cargo services are particularly important for high-value and/or time-sensitive commodities. All of Michigan's 235 public-use airports are capable of supporting air cargo operations, seven of which provide 100 or more weekly flights. In 2003, Michigan airports handled over 300,000 tons of air cargo and 28,500 tons of mail.

Michigan's Freight Forecast

The U.S. Department of Transportation Freight Analysis Framework predicts that the volume of freight will almost double by 2035. The percentage of truck shipments will increase within, from and to the state, while the percentage of air shipments are expected to remain the same and rail and marine shipments are predicted to decrease. The American Association of State Highway and Transportation Officials (AASHTO) has calculated that nationally, **without growth in the freight-rail system, 900 million tons of freight could be shifted to the highways by 2020, costing shippers $326 billion and highway users $492 billion in**

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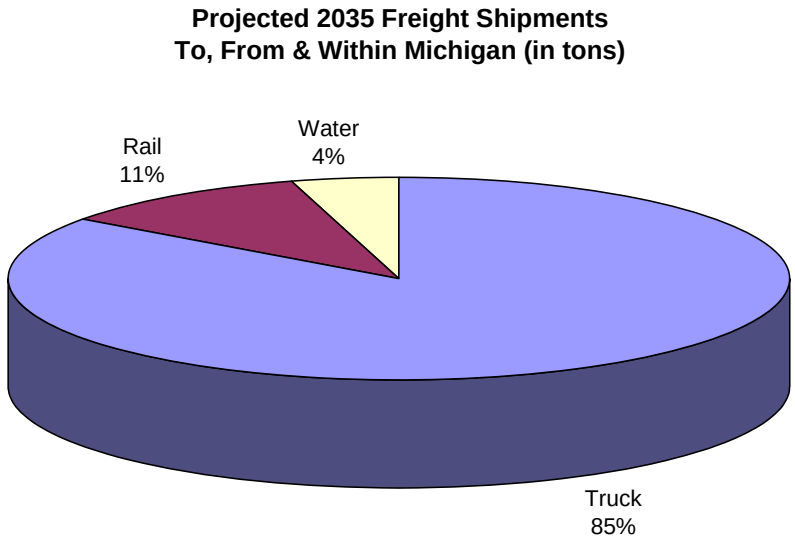
[12] American Association of Short-Line Railroads, utilizing a Texas Transportation Institute formula. 2005.

[13] American Association of State Highway and Transportation Officials. Freight-Rail Bottom Line Report.

travel time, operating and accident costs, and necessitating $21 billion in highway improvements (not including the cost of improvements to bridges, interchanges, local roads, new roads or system enhancements).



Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework

The Cost of Doing Nothing

The cost of managing, moving and storing goods—total logistics—has recently had the first notable increase in over 25 years, attributed to fuel prices and the restricted system capacity across all modes of freight transportation. The total logistics cost was almost 10 percent of the gross domestic product in 2006. The fear is that logistics costs could undermine future economic productivity, competitiveness and economic growth.[14]

A 2002 report from the Transportation Research Board reported that a region's ability to minimize traffic congestion and provide reliable freight movement significantly impact if jobs are created there. Making the point, the business community identified urban traffic congestion as a weakness for sustaining Michigan's economic future at a 2003 transportation summit hosted by the Michigan Department of Transportation. The Texas Transportation Institute reports that from 1993 to 2003 the cost of congestion in the nation's urban areas increased 60.2 percent

[14] Association of American Railroads. National Rail Freight Infrastructure Capacity and Investment Study. September 2007.

to $63.1 billion. The U.S. Department of Transportation estimated that **the cost of congestion across all modes of transportation could have raised that figure to $200 billion per year, if productivity losses, costs associated with cargo delays, and other economic impacts to freight carriers and businesses were included.**

Logistics Industry Illustrates the Cost of Doing Nothing

Logistics and supply chain management is the science of efficiently moving, managing and storing goods. Reducing the lead time for components in the manufacturing process (instead of warehousing unneeded back up quantities) relies on an effective transportation network across all modes. Logistics enterprises provide value added services to maximize efficiency and eliminate unnecessary delays.[15] Michigan has a mature and creative logistics industry as a result of our industrial & manufacturing heritage. The "just-in-time" inventory system for the auto assembly plants is a familiar concept. This is perhaps the most accessible example of reliably expecting delivery of component parts instead of stockpiling parts at the plant. Just-in-time makes the transportation system part of the assembly line as logistics providers ensure the customers requirements in precision windows of time, thus saving stranded costs of inefficiency.

Supply chain management and logistics services are economic accelerators: investment in this industry can produce significant net benefits and a favorable return on resources invested. Logistic enterprises are always a secondary function – one would not operate a logistics company without businesses and consumers to serve. Michigan's preeminence in the logistics and supply chain management industry cannot be taken for granted, and the investment in effective transportation networks is vital.

While Michigan grapples with averting an infrastructure crisis, other states are incentivizing logistics providers with economic and transportation infrastructure priorities. The cost of "doing nothing" in Michigan is amplified by examining what is happening in other states to support their manufactures and consumers:

[15] The Intermodal Freight Subcommittee was privileged to consult with Dr. David Close, Chairperson of MSU's Department of Supply Chain Management during our subcommittee discussions.

Chicago-Cook County

The Chicago-Cook Business Center (CCBC), a public agency and principle economic development organization for the Chicago-Cook County region, spearhead the Chicago-Cook County logistics initiative. The CCBC was instrumental in developing and implementing an expanding international trade program called the International Trade Partnership Program (ITPP). It was established to promote increased international trade and international investment between the Chicago-Cook County region and selected partner regions around the world. Currently, the ITPP has accomplished partnership agreements with Italy and Ireland, with additional agreements under development in Australia, Belgium, China, India, Mexico and South Africa, just to name a few.

Kansas City Smart Port

The Kansas City (KC) SmartPort is a non-profit, investor-based organization supported by both the public and private sector poised to: 1. grow the Kansas City area's transportation industry by attracting businesses with significant transportation and logistics elements and, 2. make it cheaper, faster, more efficient and secure for companies to move goods into/ from/through the Kansas City area.

The KC SmartPort is poised to be an excellent hub for logistics and transportation operations. It has the largest rail center, by tonnage, in the United States, and it has more Foreign Trade Zone space than any other U.S. city. The area is also located at the intersection of three of the nation's major interstate highways, has access to the Kansas City International airport, is located on the largest navigable inland waterways and is at the heart of a rail corridor spanning coast to coast across the U.S.

The KC SmartPort has three initiatives. They are: to attract investments from companies with significant transportation and logistics elements such as distribution centers, warehouses, third-party logistics providers and manufacturers; to start a trade data exchange (TDE), which is a way to improve the supply chain visibility and cargo security as it increases efficiency in the supply chain; and to bring additional services, such as foreign customs office, to the Kansas City area to aide businesses, of all sizes, in moving their goods both domestically and internationally.

Dallas Logistics Hub

Dallas Logistics Hub (The Hub) is a 6,000-acre development envisioned to be one of the fastest growing, privately-held companies in the United States. The Hub consists of strategically placed logistics parks (also referred to as Inland Ports) located near all the major intermodal, rail, highway and air infrastructures.

The Hub is uniquely positions to become what they refer to as the "center for worldwide trade." It is positioned along both the Union Pacific and BNSF rail networks, which connect the east and west coast. The Hub is the only logistics park in the Dallas/Fort Worth area that is adjacent to three major interstate highways, all without major congestion issues. It is also the area's first point of entry for western and southern trade routes.

In terms of trucking distance, drivers can reach over 180 million people within a two-day trucking radius, and they can get to 19 domestic markets and almost 60 percent of the U.S. population overnight from the Hub.

The Louisville International Airport

The Louisville International Airport is home to Worldport, which is the size of 80 football fields and capable of handling 84 packages a second, or 304,000 per hour. With over 20,000 employees, UPS is one of the largest employers in Louisville, and in the Commonwealth of Kentucky. The facility mainly handles express and international packages and letters. Worldport serves all major domestic and international hubs.

A one million square foot expansion was completed in spring 2006 to integrate heavy freight into the UPS system. The new facility, designated "Worldport Freight Facility" (HWP), went online in April of 2006. In May 2006 UPS announced, that for the third time in seven years it would significantly expand its Worldport hub at Louisville International Airport, with a second billion-dollar investment. More than one million square feet will be added to its existing facility, with a 334,500 sq. ft space to be renovated with new technology and equipment. Worldport capacity will to expand by 60 percent - from 305,000 packages/hour to 500,000 packages/hour. Additionally, several ramps at the Louisville International Airport will be built or altered bringing a total increase of just over 3,000,000 sq. ft. Construction began in July 2007, with an anticipated completion in September 2010.

Trucking Needs

Current Roads System ("Do Nothing")

- Escalating cost of delivery, operation & equipment maintenance
- Growing "stranded costs" of delay
- Reduced competitiveness for employers, manufacturers & consumers
- Increased costs of goods throughout the economy
- Marginalize Michigan's current competitive advantage of truck size & weight

Good: Enhancing Trucking Productivity

- Ensure maximum transportation funds are dedicated to roads & highways, minimizing non-road diversions. (Example: allocate 6 percent sales tax on motor fuels toward transportation rather than general fund.)
- Ensure *efficient* revenue collection and administration of transportation funds. (Trucking supports building on the advantages of fuel tax system and is concerned about tolling & public private partnerships for existing and proposed transportation facilities because of duplicative administrative costs and "paying twice.")
- Adopt policies that improve trucking productivity and release existing captive capacity.
- Focus transportation investments on congestion mitigation on commercial trade routes that will have the most impact on systemic chokepoints
- Promote and incentivize non-infrastructure capacity enhancements. (Examples: Pre-clearance procedures at international borders; expand Customs facilities at locations where MDOT has responsibilities; ITS at weigh stations; etc.)

Better: Priority Funding for Freight Movement

The items below represent infrastructure investments and priorities that would be of the greatest benefit for trucking and Intermodal freight:

Congestion mitigation - Congestion affects the mobility performance of Michigan's roadways and raises freight transportation costs. While only 20 percent of the state's roadways are at or approaching congested, 31 percent of the commercial vehicle miles are on state trunklines.[16] Congestion consistently ranks among the "top 10" critical issues in the trucking industry, which intensifies hours of service issues, truck driver shortages, cost of fuel and lost productivity.[17] Local roads are equally important for freight deliveries & system connectivity and for seasonal agricultural needs, but congestion mitigation has the most bang for the buck on improved delivery reliability for the broader economy.

[16]Michigan Department of Transportation, State Long-Range Transportation Plan, 2005-2030. Conditions and Performance Technical Report.

[17] American Transportation Research Institute, "Critical Issues in the Trucking Industry – 2007"

Trade Routes - Trade between the U.S. and Canada has increased over 75 percent over the last decade, with trade between Michigan and Canada growing to 32 percent. And although Michigan's peninsular geography has typically kept though-traffic relatively low, shipments originating in Ontario and moving through Michigan to Chicago or Texas are increasing. Over 60 percent of U.S./Canada trade moves by truck. From 2001 to 2005 over 40 percent of all U.S./Canada trade moved through the Ambassador Bridge in Detroit or the Blue Water Bridge in Port Huron.[18] Since 1999 actual border traffic has declined dramatically at all crossings[19], while border inspection times have escalated, creating non-road congestion delay.

International freight activity is a positive reflection of economic activity, but delays at border crossings due to congestion and border inspection times create inefficiencies and productivity losses—negatively impacting Michigan's economy. State policy has little to do with federal Homeland Security border clearance processes, but it is clear that additional inspection facilities are more cost effective than additional roadbed capacity at international borders. **Pre-clearance facilities well in advance of the border allow truckers to comply with advance dispatch documents and reduce Customs wait time up to 90 percent. Providing additional primary Customs inspection facilities at existing crossings reduce border delays.**

The I-94 corridor that provides a link between Ontario and Chicago is the portion of the highway infrastructure that supports the largest volume of commodity flows. I-94 near the Indiana state line carries about 100 million tons of freight annually, the most of any highway facility. Secondary traffic, including movements to/from distribution centers, intermodal terminals and air cargo facilities, constitute the highest value of commodity movements.[20]

All-season roadways - Ensuring roadways that service industries, including agricultural and timber products in the rural areas of the state, is essential to linking these products to the market. Approximately 4 percent of state highways have any seasonal restrictions at all. However, those remaining sections of the state highway system, and more significantly, sections of county roads that not already all-season roadways should be upgraded to Class A in these industry corridors.

Forest roads - $5 million from the Transportation Economic Development Fund (TEDF) is distributed between counties based on their percentage of the state's total acreage of commercial forest, national park and national lakeshore land for the construction or reconstruction of access roads. **Funding for these roads has not increased since 1987.**

[18] Michigan Department of Transportation, State Long-Range Transportation Plan, 2005-2030, Freight Profile.
[19] Bridge & Tunnel Operator's Association, annual crossing reports.
[20] Michigan Department of Transportation, State Long-Range Transportation Plan, 2005-2030. Freight Profile.

MDOT Rail Freight Program Needs

MDOT administers programs to support grade crossing safety and to preserve and expand the state's rail system. MDOT has made program projections over a six-year time frame, 2010-2015. Program needs are grouped as grade crossing and system preservation and development, under three levels of investment-- current (based on current funding levels); good (additional funding) and better (full funding to address identified needs).

In its Freight-Rail Bottom Line Report, AASHTO identified rail safety, primarily grade crossing safety, and short-line improvements as the two system-wide needs in its analysis. A North Carolina State University survey identified $13.8 billion in grade crossing safety needs. The Railroad Shipper Transportation Advisory Council identified $11.8 billion in 2000 in short-line improvements.

Grade Crossings

MDOT's grade crossing programs provide federal and state funding (FHWA Section 130 and Michigan Transportation Fund) for grade crossing improvements at the state's approximately 4800 public grade crossings. Funding is provided for motorist safety of some type at the approximately 4500 grade crossings under the jurisdiction of counties, cities and villages **reducing motorist risk up to 89 percent with the installation of active-warning devices and entirely removing motorist risk at locations where crossings are eliminated.**

Additionally, for the approximately 300 grade crossings on state highways, MDOT works to improve crossing surface conditions and modernize active warning devices for motorists. Because car/train crashes have such a high fatality rate, MDOT focuses on prevention in an on-going effort.[21]

Current Grade Crossing Expenditures ("Do Nothing"): $9.3 million

Consistent with federal and state requirements, MDOT works to identify the crossing locations where expenditures are a priority. This analysis is completed annually and from that, 50 to 70 locations are typically addressed each year, responding to any developing crash patterns and road improvement projects, as well as undertaking preventative measures at crossings that meet certain risk characteristics. MDOT estimates at this funding level, it is able to annually address approximately five percent of the crossings that are most likely to warrant safety enhancements at this time. This approach has historically proven to give MDOT the flexibility to address the most significant emerging crossing-safety concerns, and would put the program on track to address all crossings that

[21] Car/train collisions are thirty times more likely to result in a fatality than car collisions with another car, bus or truck. Operation Lifesaver.

are most likely to warrant safety enhancements in the state by approximately 2030.

Due to competing safety priorities, there has been reduced allocation since 2006. Current federal funding allocated to grade crossing safety efforts on local roads is nearly $1.3 million lower than historical allotments. Historical allotments had not increased since 1993, despite the rise in project costs at least 6 percent per year. **In recent years MDOT has been able to add active-warning devices at 40 to 50 local crossings annually. Due to budget constraints, MDOT expects to address five to 10 fewer locations in FY 2009.** Federal funds allocated for trunkline grade crossings also will be reduced. The program will receive $2 million less in FY 2009, FY 2010 and FY 2011 than FY 2008. MDOT typically undertakes 10 to 20 trunkline projects annually, but for FY 2009, has scaled back to address only three (in part due to the anticipated costs of these particular projects). The reduced funding limits MDOT's ability to respond to changes necessitated by road improvement projects and slows the process of ensuring acceptable levels of motorist risk by adding active-warning devices at crossings.

Good Grade Crossing Expenditures: $12.6 million

An additional $3.3 million ($1.3 million for local and $2 million for trunkline crossings) would return the programs to historical funding levels. This would fund an additional five to 10 safety enhancement projects that could be undertaken on local roads and trunklines, as well as allow for ten to twenty crossing surface improvements at trunkline crossings. This would allow MDOT to continue to annually address about five percent of the locations that would most likely warrant safety enhancements, dealing with developing crash patterns and work **to prevent crashes by reducing risk at, as well as respond to changes necessitated by road improvement projects and trunkline crossing surface deterioration**.

Better Grade Crossing Expenditures: $25.8 million

- An estimate $1.3 million would allow MDOT to annually address about five percent of the crossings that would most likely warrant safety enhancements.
- An estimated $6 million would help MDOT improve trunkline crossing surfaces to meet the department's good pavement condition goal of 90 percent.
- An additional $2 million will allow MDOT to modernize existing warning devices at trunkline crossings, ensuring device reliability and uniformity for motorists at 10 to 20 locations per year.
- $7.2 million would allow for the creation of a program to help upgrade the most critical crossing surfaces on local roads. Based on a survey conducted by the Michigan Railroads Association, **almost 20 percent of Michigan's crossings are in need of repair or replacement.** MDOT estimates a $7.2

million program to match railroad investments could support approximately 200 projects to improve crossing surfaces on local roads annually, about five percent of all local crossings.

Rail System Preservation and Expansion
Approximately $4.3 million State Comprehensive Transportation Fund dollars are distributed annually for the capital preservation and expansion of the rail system through MDOT's Freight Economic Development Program (FEDP), the Michigan Rail Loan Assistance Program (MiRLAP) and the Capital Development Program (CDP).

The FEDP supports rail infrastructure improvements that facilitate economic development in Michigan. To protect the public investment, assistance is provided as loans that are forgiven when recipients meet contractual shipping commitments. Typical recipients of this funding are private companies locating or expanding along railroad lines that need new or improved rail access. On average, the program contributes $215,000 per project and is involved in approximately three economic development projects per year, which on average aid in the creation or retention of approximately 75 jobs per project. It is a small program that can fill a niche in the Michigan Economic Development Corporation's (MEDC) overall incentive packages.

MiRLAP is a revolving loan fund designed to contribute to the stability and growth of the state's business and industry by helping to preserve and improve Michigan's rail freight infrastructure. Non-interest loans are awarded to fund rail infrastructure preservation projects, such as track rehabilitation and bridge/culvert repair.

The CDP manages the approximately 530 miles of state-owned rail lines. These lines provide the only rail access to many areas of the state, comprising an integral part of Michigan's integrated transportation system. The lines currently provide rail freight service to approximately 80 customers shipping or receiving products, such as sand, agricultural and forest products, coal, propane and manufactured food products. **In 2007, almost 16,000 carloads were shipped or received on the lines, up more than 25 percent from 2000.** MDOT's rehabilitation efforts, combined with the operating railroads' work to increase the traffic base are geared toward making the lines viable again in the private sector.

Current System Preservation and Expansion Expenditures: $4.3 million

Current annual revenue is insufficient to meet the preservation and expansion needs of the system. Current revenue levels for the management of the state-owned rail lines cover only fixed costs. Current revenues for the Capital Development Program and the Freight Economic Development Program, which share a funding source, are 40 percent below FY 2000 levels. **This has resulted in approximately $15.2 million in delayed track rehabilitation projects on the state-owned rail lines.** Delayed projects include track rehabilitation between Lake George and Marion, Cadillac and Yuma, and crossing surfaces between Ann Arbor and Howell. To date, the Rail Infrastructure Loan Fund (MiRLAP) is $2.7 million short of the full $15 million state contribution set by law.

Good System Preservation and Expansion Expenditures: $6 million

- An additional $500,000 annually would help to cover increasing property management costs, as well as emergency repairs on the state-owned rail lines.
- Restoring preservation and development funding to FY 2000 levels would better position MDOT to move forward with some delayed track construction projects. More funds would then also be available to support any freight-related economic development activity, funded from the same account.
- An additional $2.7 million to the MiRLAP program would bring the program to its full funding level and make available $1.5 million per year for new loans. With the average cost of MiRLAP loans at approximately $450,000, available funds could cover an average of three projects per year.

Better System Preservation and Expansion Expenditures: $15 million

- An additional $500,000 annually should be sufficient to cover increasing property management costs, as well as emergency repairs on the state-owned rail lines.
- MDOT has identified $5 million in annual unmet annual track rehabilitation needs. This would allow the Capital Development Program to undertake track projects on approximately 15 to 20 miles of the system per year. With the typical track project life span of 20 years, it would make funding timely for a logical improvement schedule. An additional $8 million would allow the Capital Development Program to complete the delayed track rehabilitation projects within two years.
- Anticipated annual Freight Economic Development program needs, funded from the same account, are an additional $2 million. With the additional funding, MDOT would market the program and better position it to respond to any potential economic development activity. Since the program is uniquely posed to offer economic incentives for improvements to private infrastructure, additional funding would better fulfill its niche as a part of MEDC incentives packages.

- A total additional investment of $12.7 million in the rail infrastructure revolving loan fund would make at least $2.5 available to loan annually. With an annual loan limit of $1 million per project, this would better position MDOT to support the rail infrastructure needs of the state, particularly for the short-line railroads. With an increasing national push to increasing short-line capacity to 286,000-pound railcars, MDOT anticipates an increased demand for infrastructure improvements from the short-line industry.

Marine Freight Issues

There are several major marine transportation issues that affect the operations and efficiencies of the system, most notably:

- Dredging of the federal navigation channels is the responsibility of the U. S. Army Corps of Engineers. Cargo shippers pay the federal Harbor Maintenance Tax, which is supposed to be used for channel maintenance, but the Administration is not releasing sufficient funds from the Harbor Maintenance Trust Fund to fully complete the required dredging. Consequently, some ports are not receiving adequate maintenance (let alone expansion) and are unable to carry full cargoes. Disposal of dredged material is also a concern at several of Michigan's ports and finding a suitable location can be problematic.

- Initiatives are underway to encourage "Short Sea Shipping" (also known as "Marine Highway") services in the Great Lakes. These services typically would carry trucks or general cargo by vessel, rather than on the highway system. A number of federal regulatory hurdles must be overcome for such services to be successful.

- Adequate connections must be available to link Michigan's ports to the highway and rail systems. The vast majority of our waterborne commerce can be accommodated by highway transport, given the regional or local distribution patterns, but rail access is warranted in limited locations for specific commodities.

- A major marine project in Michigan is the construction of a new large lock at Sault Ste. Marie, which will increase the system's efficiency and reliability. The new lock will replace two World War I-era locks no longer in use.

Freight Efficiencies

Intermodal Freight Transportation

The intermodal concept is a perfect demonstration of an integrated transportation system. Intermodal service draws on the strengths of each mode and uses them to provide businesses with the most effective means of transport. Intermodal transportation improves customer service and supply chain cost performance. Typically for intermodal services, retailers buy a door-to-door package that will include the multiple shipping modes, including rail, local trucking, etc. **Between**

2001 and 2005, the volume of rail intermodal grew by 32 percent. In 2003, the truck-rail intermodal surpassed coal to become the number one source of freight-railroad revenue.[22]

In addition to the exchange of containers and trailers at intermodal terminals, there are many more transloading facilities that exchange commodities between modes. For example, a plastic-pellet transload facility adjacent to the state-owned rail line through Clare has seen a huge increase in business over the past few years. **Traffic projections for that facility in 2008 are nearly triple 2006 levels.**

Intermodal Freight Terminals (container/trailer)

Facility	Location	Modes	Owner
Norfolk Southern Triple Crown	Wayne	Highway Rail	Norfolk Southern
CSX Livernois	Wayne	Highway Rail	CSX Transportation
Norfolk Southern Livernois	Wayne	Highway Rail	Norfolk Southern
Norfolk Southern Delray	Wayne	Highway Rail	Norfolk Southern
Canadian National Moterm	Oakland	Highway Rail	Canadian National Railway
Canadian Pacific Oak Yard	Wayne	Highway Rail	Canadian Pacific Railway

Michigan's Truck Weights and Trucking Productivity Improvements

Michigan's truck weight law encourages the efficient movement of heavy commodities by trucks. Michigan's allowable weights, heavier than federal law, are allowed under grandfather clauses. Michigan has long allowed gross vehicle weights of 164,000-pound, beyond the federal maximum gross vehicle weight of 80,000-pound, but limits the weight allowed on individual axles. This continues benefit the automotive, agricultural, steel and construction industries and offer a statewide competitive advantage.

Improved regulatory policies would enhance trucking productivity and release existing captive capacity. For instance, additional truck/trailer combinations would immediately improve productivity, reduce the number of trucks on the road and address driver shortage issues.

Improved coordination at Intermodal terminals and port facilities would capture productivity from reduced wait times and provide more efficient equipment utilization and less drayage.

[22] Michigan Department of Transportation, State Long-Range Transportation Plan, 2005-2030. Freight Profile.

Rail Industry Efficiencies

Nationally, railroads are working to improve train productivity by .5 percent by 2035. The industry is working to carry the same amount of rail freight, but with fewer trains by hauling more cars per train and loading railcars more efficiently to make better use of the 286,000-pound capacity of railcars. This gain would reduce capacity expansion needs in many corridors.

Divestiture of the State-Owned Rail Lines

With legislative action to give more flexibility to the divestiture process, MDOT would be able to more quickly return the state-owned lines to the private sector. In 1998, the Legislature passed a law mandating that MDOT begin an effort to return four distinct segments of the state-owned lines to the private sector. The statutory language is specific in terms of the designated endpoints of the lines, as well as the order in which the four lines it includes are to be divested. Fixed endpoints force interested railroads to purchase "end" portions of corridors on which there is no existing customer base. Mandating an order prohibits MDOT from moving on to the next line when one divestiture effort stalls, which has happened.

Best Alternative

The reliable, safe and efficient movement of goods is essential to Michigan's economic future. Developing a more flexible, efficient transportation system will increase productivity and promote economic growth. The road to achieving this strategic position will require the inclusion of freight needs in transportation planning, including freight forecasting and an integrated approach.

The Intermodal Freight Subcommittee acknowledges the broad needs identified by the Highways, Roads and Bridges Subcommittee and recognizes the significant challenges to provide resources to those transportation system needs. The summary of freight needs speaks more to policy makers on the issue of prioritization of resource investment where it has the greatest impact on the movement of freight. Intermodal interfaces where modes intersect (grade crossings, intermodal terminals, etc.) and emphasis on truck routes of greatest impact, combined with advancement of non-infrastructure productivity enhancements will yield the greatest return on investment for Michigan.

While often taken for granted, the movement of freight (accomplished with significant private sector investment by intermodal service providers) is vital to Michigan's economy and future growth. As policy makers begin the task of addressing the documented needs of Michigan's transportation system, we urge that the "voice of freight" be attended to, as it affects the every employer, manufacturer, consumer, and citizen.